

THE GRAND CANYON River Runner

Number Three

preserving public access to the Colorado River

Fall, 2006

CRMP UPDATE

The long awaited Colorado River Management Plan was finalized on March 23, 2006 with the approval of the Record of Decision.

This was the final step in a many year process of review and assessment with voluminous input from all stakeholders including science, state and federal agencies, affected tribes, private boaters, river guides, outfitters, advocates for the disabled, educators, wilderness advocates, environmentalists and members of the public. Grand Canyon River Outfitters Association and Grand Canyon Private Boaters Association joined with GCRRA and American Whitewater in presenting a set of joint recommendations to the NPS during the comment Phase of the plan's revision process.

Five days after approval of the plan a lawsuit was filed in the United States District Court for the District of Arizona by River Runners for Wilderness et al. In the ensuing weeks GCROA and GCPBA filed separate motions to intervene in the suit on behalf of the defendants, Grand Canyon National Park, Superintendent Joseph Alston, et al. The case schedule has been set, with no additional information to report at this time. Significant updates will be posted to the GCRRA website as the information becomes available.

The National Park Service has proceeded with implementation of the new management plan despite the suit. Private boaters are being impacted already since Phases I and II of a three phase process have already taken place. Firm launch dates for hundreds of private boaters whose projected launch dates were as long as twelve years in the future have been scheduled during the next few years. Phases I and II were reserved for the applicants who had been on the infamous wait list the longest. Phase III, due to take place October, 2006, will be a weighted lottery open to all comers. Notable features are

extra chances (up to five based on length of the wait time) for applicants on the wait list not already accommodated in phases I or II, and fee payment requirements and infrastructure that will discourage 'gaming' of the system. The new system seems well designed to get the greatest number of private boaters on the river and our counterparts at Grand Canyon Private Boaters Association are pleased with this outcome.

The river experience will look somewhat different to those who have taken commercially outfitted trips in the past. There will be fewer trips on the river at any one time during the peak summer months. There will be a maximum of three motor launches per day in summer. There should be noticeably less crowding at favorite stops because of the overall reduction of trips on the river. When fully utilized, the commercial user day allocation will introduce more people to the extremely pleasant spring and autumn months on the river. Motor trips

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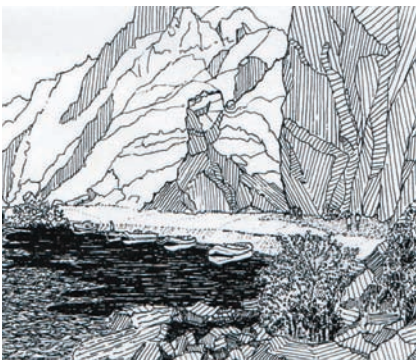
Granite Narrows © Mari Carlos



Fabric Art © Donna Hudson

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Pen & Ink © Donald Coordt

will have fewer passengers. Oar trips will also have a smaller maximum size. The outfitters worked hard to make the 2007 launch schedule fit the new rules and regulations, but to most of their passengers the transition will appear seamless.

While the outcome of the complaint filed in Phoenix is as yet unknown, all parties are currently proceeding with full implementation of the new Colorado River Management Plan. No significant changes to the plan are anticipated, although GCRRA, the outfitters and private boaters will all monitor the implementation and progress of the plan. It is hoped that any unanticipated adverse consequences can be dealt with quickly with adaptive management.



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Ode to the River

Have you ever viewed nature with a group of non-bathers
Or squatted in order to pee?

Has your skin turned to scale like the BrightAngel shale?
Then you've been on the river with me.

Has the sand ground your teeth?
Has the sun burned your face?
Of your salon coiffure there is nary a trace
Have the 20-foot waves splashed like a great big sea?
Then you've been on the river with me.

Have you struggled with gear while choking on fear
With the boulders just looming ahead?
Then you're through and it's calm and you're drifting along
Giving thanks that you're living, not dead.

Have you stood in a queue with your bowels a-groaning?
Have your neighbours awakened you with their sighing
and moaning?
Has your bedding been wet?
Oh, it's not over yet.
Come ride on the river with me.

Have you ever heard a Medivac and wanted to get on?
Thinking, "Somewhere, please God, up there, there must be
a salon!"
Have you bag-lined and kitchen-lined 'til you wanted to
scream?
Thinking, "I paid money for this? This must be a dream!"

Though they always tempt fate, our boatmen are great
They're cheerful and charming and sweet
Their chef skills astound, the portions abound
Come dine on the river, you'll see.

Travis the Caveman and Steph in her dress
Cooked, cleaned and carried, they ably passed the test.
Two finer companions you never will see.
Come float on the river with me.

Through the aeons of time, down the river we wind
'Midst stories, and sad songs and jokes
The man at the tiller, whose name is Mark Piller
Is truly the best of the folks.

May 2006

Christine Oakes, Canada, and
Christina Bojorquez, Selma, California

Message from GCRRA President

There is so much documented human history in Grand Canyon that you never have to look very far to find an anniversary of a significant event.

I have just returned from a trip that was noteworthy in that respect. The 5th day out from our late June launch from Lees Ferry put us almost exactly at the point in the canyon where two commercial airliners collided in midair 50 years earlier.

It was June 30, 1956, a clear morning in Los Angeles that gave no clue to the disaster that would occur later that day just a few hundred miles to the east, directly over Grand Canyon. Two eastbound flights, a United DC-7 and a TWA Super Constellation, left Los Angeles 3 minutes apart. A variety of circumstances combined to cause the airliners to collide and crash near the confluence of the Colorado and the Little Colorado rivers. It took recovery teams days to gather the remains of the 128 people who perished. Some of the United passengers are buried in the Pioneer Cemetery on the South Rim, while the TWA crew and passengers were laid to rest in a mass grave in Flagstaff.

This was the worst commercial aviation disaster in U.S. history up to that time, but its impact is still being felt today. Fifty years ago commercial aviation was monitored by the Civil Aeronautics Administration, an agency whose resources were proving to be inadequate for the exponential growth of the industry it was charged with administering. With the advent of commercial jet travel imminent it was becoming increasingly apparent that a major overhaul would be needed in order to insure the safety of the flying public. The Grand Canyon air disaster captured headlines around the world and galvanized Congress. Ultimately millions of

dollars were allocated for much needed radar and navigation equipment. More importantly, the Federal Aviation Agency was formed as a direct consequence of this cataclysmic event.

We observed another, more uplifting anniversary a few days later and a few miles downstream at Lava Falls. On July 5, 1960, New Zealander Jon Hamilton, became the first to complete an up run of Lava Falls, or Vulcan as it was known then. The 1960 jet boat expedition had already completed a standard down run in order to assess the rapids and to store fuel needed for the up run. The up run began from Lake Mead and looked in danger of failing at Lava until, after multiple lengthy attempts, Jon Hamilton finally found the magic route and topped out just before noon on the 5th of July in Kiwi. Jon's father, Bill Hamilton, had invented the jet boat in New Zealand, so there was probably no one more familiar with the boats than the inventor's son. Jon piloted the other 3 boats, Dock, Wee Red and Wee Yellow, up and over Lava on the following day.

The jet boats conquered the Colorado and triumphantly completed their up run at Lees Ferry, but not without incident. A few days before the Ferry Wee Yellow had hit a wave in Grapevine so hard that she filled with water and sank in a matter of seconds. Otherwise the expedition was a huge success, and one that will never be repeated. Upon completion of the trip the Park Service banned all future up runs.

River historian Brad Dimock informed us that Wee Red will soon be joining the other historic boats currently being housed at the South Rim, a collection that already includes Dock, one of the other surviving jet boats. Wee Red will be a worthy addition to this fabulous collection of historic Grand Canyon river running boats.

Mari Carlos



Tanner Rapid © Mari Carlos

GCRRA Membership Dollars Support The Grand Canyon Conservation Fund

By Rob Elliott

Since 1987 an estimated \$850,000 has passed from your pockets, through participating Grand Canyon outfitters, directly to the pockets of Grand Canyon conservation organizations and non-profit organizations working to provide Grand Canyon river trip access to persons with disabilities and/or socio-economic barriers to participation, one dollar for each day-you-spend-on-the-river at a time.

\$850,000 is a lot of money, doing a heap of good, all with very little effort. Here is the story of how the Grand Canyon Conservation Fund (GCCF) works, how it got started, what it supports, and how you and GCRRA fit into the picture.

HOW GCCF WORKS

For most of you, your river trip invoice automatically includes a one dollar per day fee that "passes through" to GCCF and you are provided an option to deduct this amount from your final payment. For the approximate 70% of you who are provided this option, 95% elect to pay the additional charge and the fee passes through to GCCF for distribution to qualifying non-profit organizations each fall.

"The Grand Canyon Conservation Fund is a 501(c) (3) non-profit public charity established in 1988 and managed by a group of the Grand Canyon's licensed river outfitters.

Each year, roughly seventy percent of all professionally outfitted river trip passengers donate \$1 per each day of their river trip to GCCF." This is the opening paragraph from Grand Canyon River Outfitters' website page about the Grand Canyon Conservation Fund which GCROA administers for no fee. There you will find a synopsis of the program, a list of participating outfitters, and a grant history dating back to 1998.

Administrative costs are less than two-tenths of one percent per year. That means over 99.8% of all donations go directly to protecting and conserving the Grand Canyon and providing access to those who would not otherwise have the opportunity to share in the Grand Canyon river experience. In fact, this "pass-through contribution" program has been so successful, that the

GCRRA Board of Directors decided in 2004 to donate 20% of your membership dollars to GCCF each year!

HOW GCCF GOT STARTED

The idea for a pass-through contribution program got its start with California's Friends of the River (FOR) during their unsuccessful fight to save the Stanislaus River from the New Melones Dam in the 1970's. Ultimately, and aided by money raised from river runners with a pass-through contribution program, FOR was successful in gaining Wild and Scenic River status for the Tuolumne River and thereby saving it from being dammed.

With the support and assistance of FOR's Kevin Wolf, Rob Elliott of AzRA approached five other Grand Canyon outfitters in the fall of 1987 and together they decided a pass-through contribution program could raise money to help conservation organizations influence the operations of Glen Canyon Dam to the benefit of downstream environmental, recreational, and cultural resources (which it did, and is still doing today).

These six outfitters started GCCF in 1988 to support environmental efforts to protect the Colorado River and Grand Canyon and then expanded its mission in 1992 to include support for non-profit organizations working to enhance Grand Canyon river trip access for persons with disabilities. These six charter outfitters found the program so easy and satisfying to administer that by the mid-90's they had brought seven more outfitters on board, almost tripling GCCF's annual fund raising capacity.

WHAT GCCF SUPPORTS

Over the past ten years \$700,000 has been distributed, 55% going to conservation groups, 40% to groups working to provide Grand Canyon access for persons with disabilities and socio-economic challenges, and 5% to other organizations including support for



Geologist Matt Kaplinski excites young people gathered around a geologic map of the Grand Canyon on a Grand Canyon Youth trip, funded in part by GCCF

the Havasupai Indians and the Whale Foundation. If you are interested in more grant distribution detail, you are encouraged to visit the GCROA website and check out the grant history from 1988 to the present.

WHAT MORE YOU CAN DO

First of all, much thanks to all of you who have participated in this wildly successful program over the past 20 years. The next thing you can do to help would be either to join or renew your membership in GCRRA and then sign up for another Grand Canyon river trip with a GCCF participating outfitter! Beyond that, you certainly are welcome to make an additional tax-deductible, charitable donation to GCCF in any amount you wish. Just go to www.gcroa.org for more details. Thank you for your interest and support!

"Our continuing assessment of camping beaches in the Grand Canyon [through GCRG's decade long Adopt-a-Beach program] provides the Adaptive Management process with the information it needs to comply with the Grand Canyon Protection Act. We extend our sincere gratitude to the river guides who volunteered their efforts over the years (and) we also thank GCCF for funding this cooperative program.

– Lynn Hamilton,
Grand Canyon River Guides

"I'm not sure how to appropriately thank those responsible for giving me my life back. This year I participated in a Grand Canyon rafting trip designed for people facing disabilities and life-threatening illnesses. People have welcomed me back, but not just from the river. They are welcoming the person whom they once knew and cared about back to life. The difference in me is that clear, not only to myself but to others. I know now that my Grand Canyon raft trip is a permanent part of me and will always be there to draw upon in the future."

– Terry, a cancer survivor and participant in a Grand Canyon trip for persons with disabilities funded in part by GCCF

"For just a few hours of effort, GCCF has helped generate more benefit for the environment in Grand Canyon and helped add more value to people's lives than any other professional activity I have been involved in as a Grand Canyon outfitter over the past 32 years. GCCF's cost-benefit ratio is simply astounding."

– Rob Elliott, Arizona Raft Adventures

THE GRAND CANYON PRAYER

by Marie Sansone © 2003

My memories of the Grand Canyon are a prayer
Of beauty, awe, and wildness
Of a river running vaguely dank, insinuating fish,
as though recalling passage to the sea;

Of waterfalls thundering out of redrock
Or perhaps spilling in slender ribbons or even a
trickle;
And always their light
Arcing through the drops, streaming silvery,
and entering into green pools
Then churning and sliding down chutes
To roil in confined beds
Or fan out along a gravel floor;

Of fog and tawny crags
And steel blue skies so sharp
they carve the canyon with an acuteness
that flouts the slow steady work of the other
elements;

Of beaches that would be tropical if but for an
instant
in a time and place that remembers the sea;
Time as deep and impenetrable as the journey
to the stars and the Milky Way itself
That wistful dusting of the black night sky
Contained by even darker canyon walls
that have lost all textural vocabulary, retaining
only their form;

Everything has been here always
From the sea in all its forms and memories
Rock remembering when it was life
Rock remembering when it was motion
Rock remembering when it was sand and sand
remembering when it was rock
Rock remembering when it fractured itself
against time

Rock remembering the passage of the
ancestors
Rock remembering when it was melting and
pouring, steaming, pushing,
then tumbling, thrown up against the sky,
or folded down and around

Becoming heavy and hard
to catch the glint of the sun and hold its heat
Or pockets of water
Or a crook of soil for a tree;

And always the river
Daylight suffuses its breeze
And there is a hint of coffee and morning song
The clatter of bighorn, a solitary deer
The river tosses up flecks of white water
Beckoning "Come play with me"
Later it will become insistent, roar even,
And there will be a heat that will draw breath from
the lungs
Or perhaps an icy slap, foreboding shade, and a
shivering dampness
But in the first light, the river is as gentle as a friend;
Raven surveys the beach with flinty eyes and a
thieving heart
Shy pink snake, lonely condor
The dart of lizards, a chorus of frogs
Tadpoles and smaller yet fly larvae
Looking like so many small plants in the flow of a
creek;

Maidenhair fern and cardinal monkey-flower
display a wanton delicacy
The sensible cactus know better
They stand firmly rooted and armed;
Water jade, golden red, chocolate, and turquoise and
milky
Flowing, pooling, and occasionally turning around on
itself
Or streaming along the underside of an oar
to slip back into the river in droplets of light

Butterflies traverse the river to frequent their
flowered haunts
Electric dragonflies hover, conducting an investiga-
tion
Clouds come and go, covetous of the river
Would that they could flow, boil, thunder,
and become the river itself;

And in this collective memory of rock and wind
Light and rain, life and danger and stillness,
Six small boats play
And their play is a prayer
For all things beautiful and wild and enduring.

BEACH HABITAT BUILDING FLOODS IN THE GRAND CANYON

by Linda Kahan

Closing of the Glen Canyon Dam and its operation since 1963 have caused huge changes in the character and behavior of the Colorado River in the Grand Canyon.

Negative changes in the rapids, beaches, plants, animals and archeological sites have all been attributed to effects of the dam. (See "Studying the Effects of Glen Canyon Dam Operations on Archaeological Sites" by Dr. Amy Drout, *The Grand Canyon River Runner*, Number Two.) There was a major change in dam operations in 1996 aimed at recovering and maintaining downstream resources, and the Glen Canyon Adaptive Management Program was created to implement this goal. Infrequent high water releases called beach habitat building flows, or controlled floods, are a

cfs (cubic feet per second) every two years (with 6 year recurrence interval floods of 120,000 cfs), and very low flows of less than 3000 cfs in late summer, fall and winter. Water temperature over the year could range from 32o F. to 80o F. It is estimated that approximately 25 million tons of sand was carried by the river past the Lees Ferry stream gauge each year. This sand, plus 1.7 million tons of sand contributed by the Paria River (entering the main Colorado just below Lees Ferry) and 1.9 million tons of sand contributed by the Little Colorado River, formed the main source of sand for building and maintaining the sandbars and beaches of the main Colorado in Marble and Grand Canyons.

Closing the dam trapped all incoming sediment from the main Colorado behind it. Water leaving the dam is clear, and the supply of sand to the river in the Grand Canyon from all sources (the Paria, the Little Colorado and minor side canyons) has been reduced to approximately 16% of

flows in summer, fall and winter were eliminated. Maximum seasonal floods were decreased (2 year floods reduced from 85,000 cfs to 31,500 cfs). Periods of low flow were substantially decreased from flows of more than 9000 cfs only 44.3% of time pre-dam, to flows of more than 9000 cfs more than 82.6% of time in the 1990's. There were large daily fluctuations in water discharge averaging 8580 cfs versus a median daily pre-dam range of 584 cfs. The change in seasonal patterns of release was especially significant because pre-dam seasons of low flow (late summer, fall and winter) coincided with periods of maximum input of sediment from tributaries. Pre-dam seasonal low flows allowed for sediment accumulation, whereas post-dam high flows during the same seasons caused rapid export of incoming sediment rather than accumulation.

The result of these changes was a large loss of sand and reduction in beach area along the river in the park, as well as choking of rapids, increased growth of invasive non-native plants and threats to native fishes. One aerial mapping study estimated the loss of sand to be about 25% of the area exposed at base flow levels pre-dam. Other estimates range from 0% to 55% depending on the study method and the stretch of river studied. Reduction of beach area has a direct impact for river runners, since beaches are used for camping and they can be rendered unusable by erosion.

In 1996 an experimental beach habitat building flow of 45,000 cfs for one week was released. The reasoning behind the release was that sand entering the main stream from side canyons over a period of years would have accumulated in the main channel, and that the flood would stir up this sand and cause it to be redeposited on sandbars and beaches, building them back up. The unanticipated result, however, was that less sediment had accumulated than was assumed, and it was exhausted before the controlled flood was ended. When the river water ran clear at the end of the flood period, sand was eroded from existing bars. Overall, at the end of the flood, net reduction of sandbar area and volume

resulted. There was an increase in the higher elevation surface area of some sandbars, but much of the sand was derived from lower levels of upstream sandbars, not from accumulated sediment in the river bottom.

In 2004, a second controlled flood was implemented, with modifications in the protocol based on knowledge gained from the results of the 1996 flood. Before the flood, dam releases were kept low between September and November to allow sand from fall tributary inputs to accumulate in the main channel. The duration of the flood was shortened from 168 hours to 60 hours and the flood was followed by a period of low flow to allow sand to settle. Results from this flood were complex, and differed in different reaches of the Canyon. "Success," as measured by net sand deposition and increase in the area of sandbars, was mixed. Above river-mile 30 there was substantial deposition of new sand. Below river-mile 30 there was either no net deposition or only a slight loss of sand. Above river-mile 30 half the sandbars were substantially larger in area and volume than before the flood. Between river-mile 30 and river-mile 87 (the Grand Canyon gauge station at Bright Angel Creek), only 18% of the sandbars were larger after the 2004 flood than they were after the 1996 flood. In total, the sandbars downstream from river-mile 42 decreased in area and volume after the 2004 flood.

An important conclusion from the scientific studies of the two controlled floods was that on a seasonal and annual basis there is a sand deficit for the river (sand export exceeds sand input).

Contrary to earlier assumptions, sand does not accumulate on a multiyear basis in the river channel. The deficit has resulted in the consistent pattern of erosion of channel bed and sandbars that has occurred since the closure of the dam. This finding has important implications for management of water releases from Glen Canyon Dam. The Grand Canyon Protection Act of 1992 requires that dam operations protect and improve downstream resources. If strategically timed and patterned floods prove inadequate to restore and protect sandbars and other resources, other measures such as changes in regular water release patterns or sediment importation may have to be employed.

The main source of information for this article was USGS Circular 1282: The State of the Colorado Ecosystem in Grand Canyon.



Lower Tapeats Creek Beach, pre-1996 flood
Photo Courtesy of Grand Canyon River Guides Adopt-A-Beach Program with thanks to Paul Lauck

component of the adaptive management program, and two have taken place since the program was initiated.

Before the dam, the river oscillated seasonally between typical spring and early summer snowmelt floods of 85,000

pre-dam level. Early operations of the dam were designed to optimize electrical generation around peak daily demand. This resulted in changed seasonal patterns of flow. The highest long duration flood flow changed to midsummer and winter rather than late spring; pre-dam, very low



Lower Tapeats Creek Beach, post-1996 flood
Photo Courtesy of Grand Canyon River Guides Adopt-A-Beach Program with thanks to Paul Lauck



My Best Day in the Grand Canyon

It's been awhile since the rafting trip but I do have many fond memories. One such is the day (8 or 9) that it was just me and the guys, Eric, Jim and Phil. I had just slept out under the stars for the first time in my life and was feeling pretty rested. We headed out for what was supposed to be a float day, but turned into a personal adventure for me. We left camp at mile 110 and headed down river- beautiful, sunny and hot! My first event was Elves Chasm-I probably do not need to say more but-on a bet I climbed in the chute behind the falls and Eric decided to take a break and put me at the helm. I oared through Blacktail, 122 Mile Rapid and Forster Rapid. The exciting part was when the oar came out of its pinning in 122. Personal challenges accomplished for me, especially when no one knew that I had broken my arm at South Canyon on night 2, mile 31. Slept out under the stars again and my day of personal solitude among the group was put to rest.



Melody Reid
Las Vegas, Nevada

I went on the Grand Canyon trip in 2000 in celebration of my 50th birthday. I have some fear around water, so decided this would be a huge challenge for me. We did the 2 week trip and I even got in the paddle boat to experience the river up close and personal. My fears were transformed into a powerful energy; my fellow rafters said that I never stopped smiling. One of my memories was tying up all the rafts in a giant "flotilla". We had an Irish guy with a guitar who played and we all joined in. We even had a sort of "kitchen band" using the 5 gallon "pee buckets" as drums. The sound was glorious as it echoed off the majestic canyon walls.



Sharon Liberatore
Sacramento, CA

Day 10 started off with a stupid human trick. I was poked, prodded, and pleaded with by my best friend Melody to swim Fishtail Rapid. She wanted to experience every thrill the canyon trip had to offer and that included me "voluntarily" jumping into a 50 degree river and gasping for air. It was memorable to say the least.



Linda Kingsley
Sacramento, CA

The afternoon hike proved to be memorable in a much more positive way. A group of us, led by head guide Eric, accomplished a difficult hike as we climbed and shimmied up the narrows to reach Matkatamiba Canyon. I was awed by the startling red open amphitheater with a small trickle of water cutting through it's backdrop. Here we all gathered and shared a moment of silence. This was followed by us opening our throats and letting our own unique sounds resonate inside the rock walls. It was truly magical.

How would one describe "best" in a place like the Canyon anyway? What comes to mind first of course is the river, in all her greatness and uniqueness...her constant flow, sound and pure presence. Or there are any of the one of a kind slot canyons, fossil sites or million dollar view points from anywhere up on the Kaibab layer...an equally magnificent vantage as down in National or Havasu Canyons. Perhaps most profound to me were the granaries, ruins and evidence of the ancient peoples and their civilization of such a wild, remote place. It gave me goose bumps to match hand prints up the trail on the way up to the "patio" knowing that the Canyon has hosted many civilizations of peoples thru time.



Lisa Argell - Freedom, CA

Best day on the Canyon, for me, was not necessarily the happiest day. Nor was it the first day or the most fun day...but at the end of day 7 when we had pulled over river left to camp at a place Howie called "Secret Arches"... a kind of non-descript place almost, certainly not as outwardly splendid as many others up or downstream...just a peaceful place with a quiet that carried into the afternoon on the sun and wind coming up the Canyon. It was there and in that moment when I sat alone on a big rock perched on the edge of the river that I was finally able to let go of my beloved grandmother. She had been in my thoughts continually, and I had been watching for a time and place, and there at mile 144 it felt right. I left her spirit with that afternoon's same quiet and wind to mingle and rest in time with the many others having traveled the Canyon before her.

We are only visitors to or in the Canyon. Life comes and goes along her great length as it always has...much and many before us and (prayerfully) much and many after us. I was thankful to have a quiet spot and a quiet moment in which to make my own memory, one that will transcend generations in our family as time transcends the Canyon.

After two trips down the river how could I possibly pick out one day which was my favorite? After some careful consideration I have decided to describe my run down the right side of Lava Falls with our trip leader Eric.



Nicholas Goepf - San Rafael, CA

As we were breaking camp that morning I had the option to ride with Jeff in the paddle boat but decided that someone who had never been down Lava should have an opportunity to experience the joy of running Lava in the paddle boat. Thank goodness I did since Jeff felt it was safer to run the left side of Lava Falls (which is the "easier side") and I wanted to run the right side (which is the "harder" side). I decided to run the rapid in Eric's boat and what a run we had. It was UNBELIEVABLE! We first sat at the scouting point and watched all the boats in the trip run the rapid so we could make sure that the other boats had safe runs - then it was our turn. I was sitting in the front of the boat and after taking off my hat, sunglasses, shirt, bandana, and all other non-essential items (i.e. those that might fly off and perish in the river) I positioned myself and started singing "Welcome to the Jungle" by Guns N' Roses with Eric chiming in. Next thing I know we are in the rapid and I get one, two, three waves right in my face. What a rush! Then we were out of the first series of waves and Eric was pulling mightily on the oars to get us square for the last part of Lava Falls which we hit perfectly and I was once again submerged in water.

As we floated downriver the boats from our trip were taking pictures and waiting for us to exit the rapid. I'm standing in the bow of the boat with water up to my knees cheering and Eric is sitting at the oars coming down off of the adrenaline rush that guides get when they make that perfect run down Lava. The trip stopped for lunch soon after that and I was slowly coming off my own adrenaline high. That was easily my favorite day in the Grand Canyon and I'll never forget it.

June 2, 2006 we started at Lees Ferry and spent seven glorious days on the river. About the sixth night out, we had a wonderful spacious campsite, and we were all sleeping under the stars. In the middle of the night a storm came up. There was wind and thunder and lightning. I was certain we'd be blown away or soaked with rain, but that did not occur. I lay awake for what seemed like hours and watched the light show. I could tell the storm was up on the rim, and that it was traveling, by how soon the thunder sound reached my ears after the lightning strikes. We were camped across the river from a mammoth sheer red rock face that lit up when the lightning was close. Other lightning strikes were zigzagging between clouds or from clouds to points far away on the rim. The emotions ran the gamut from awe inspiring to humbling to at moments fear. This was a once in a lifetime experience.



Emilie Brosin

The All Female Paddle Raft (plus one)

I recently took my first raft excursion down the Colorado after previously being only a hiker viewing the river from the shore. At one "happy hour" at day's end where the wine was pouring freely, we were mourning the rapidly approaching end of the journey. Someone piped up about what a shame it was that most of the female travelers had not taken a turn in our paddle raft, choosing instead to ride the rapids in one of the oar boats piloted by our capable guides. The decision was made to "remedy" this problem the next day. We did, bringing along our honorary "sister" Travis, our favorite guide to be the paddle captain. We all had a blast, even having a poetry slam, a flute duet, talk of shopping and cooking and a rest stop where all the girls jumped over the side at the same time to take a potty break. A fun memory from a trip of a lifetime!



Diane Schaub
Gainesville, Florida



All condor photos courtesy of Chris Parish.

Condor Notes

by Thom Lord

Monsoon season arrived none too soon this year, providing much-needed precipitation and somewhat cooler weather to the residents (human and otherwise) of northern Arizona. The frequent rains helped to finally contain the large wildfires consuming the area's parched forests, and brought some relief from the stifling temperatures that we had been experiencing in the preceding weeks. The California condor population in the region followed a pattern that has become typical for this time of year, with many birds escaping the heat by heading to the cooler high-altitude regions of Zion and Grand Canyon National Parks.

This increased travel and expanded foraging, while wonderful to see in this relatively new wild population, requires increased vigilance on the part of Peregrine Fund biologists, due primarily to the threat of lead poisoning in the species. Condors are strict scavengers, and a percentage of the carcasses that they find and feed on are contaminated with lead, usually in the form of bullet fragments. According to recently published studies (which can be found at www.peregrinefund.org), animals that have been shot

with lead ammunition can contain hundreds of bullet fragments, ranging in size from microscopic to a few centimeters long. These fragments can exist in whole carcasses or in gutpiles from field-dressed game, both of which the condors have been documented feeding upon on many occasions. Ingesting just a few small fragments of lead may be enough to kill a condor, and we now know that other scavenging species, such as bald and golden eagles, turkey vultures, and ravens can also be affected.

Because it is so important for us to monitor the feeding and movements of the individuals in the wild California condor population, the vast majority of the birds wear some type of tracking device, either a conventional radio transmitter or a GPS transceiver. These devices are extremely important tools in the management of the population, and give us important information on bird location and movement that would be impossible to gain in any other way. Therefore, when these transmitters lose battery power or malfunction, we have to capture the condors to repair or replace the devices. For just this reason, we

spent the better part of a month this summer trapping condors in between their forays from the release site. We were able to capture almost every bird in the Arizona population, and opportunistically tested their blood lead levels as well. In addition to remedying any transmitter problems, we discovered a few incidences of lead exposure, and were able to treat those birds successfully.

Although it is often possible to treat condors for lead poisoning, we would much rather reduce the amount of lead available to them in the first place. We can not always capture a poisoned bird in time to treat it successfully, and the effects of long term lead exposure are unknown in condors. In addition to those practical obstacles, our goal is to produce a self-sustaining population, one that is not dependant on us to trap and treat them regularly. Non-lead ammunition is available, commonly as a solid copper bullet, and our goal is to encourage as many hunters as possible to use this high-performance ammunition, particularly in the range of the condor. The Arizona Game and Fish Department has been invaluable in this regard, initiating a program last year to provide free non-lead ammunition to every hunter that drew a big game tag in the condors' range in Arizona. This outstanding program showed much promise in its first year, with participating hunters overwhelmingly pleased with the performance of the ammunition; it will be instituted again this season. We're optimistic that this campaign will help raise awareness of the issue in the hunting community, provide hunters with an opportunity to continue their long-standing tradition of wildlife conservation, and eventually create an environment in which the California condor will thrive without the need for intervention.

Thomas Lord is Field Manager for The Peregrine Fund's California Condor Restoration Project. For more information please visit The Peregrine Fund at www.peregrinefund.org



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Some Thoughts on Exiting the Grand Canyon

Floating downriver in silence as we approached our Journey's end at Diamond Creek...

Our Mother Gaia has opened herself to us.
Beneath her soft face of earth and grasses,
She has revealed her mighty skeleton—

The grandeur of granite, limestone, sandstone, schist and shale;
The lava brimming forth from the depths of her fiery heart.

Mother Gaia weeps tears of joy and sorrow,
Coursing in mighty torrents down her craggy canyons,
Her waters nourishing all her children along the way,
And refreshing and cleansing our bodies and souls.

Her strength, her beauty, her spirit are ours;
Our Mother Gaia has opened herself to us.

—Nancy Peterson
Schenectady, NY
July 3, 2006



CARVING GRAND CANYON

by WAYNE RANNEY

You are about to embark on the trip of a lifetime.

Maybe it's your first trip down the river, maybe it's your tenth. But whatever, there's no escaping the fact that you'll soon be "buried" within the walls of the Grand Canyon for a significant amount of time. Each mile downstream from Lees Ferry will bring you about 70 feet deeper into the earth's most magnificent gorge and when you have traveled 72 miles, you will be more than one mile down, comfortably held in the embrace of ancient stone. And it's almost a guarantee that by the time you get to this point, you will have pondered the mere existence of this canyon and how it got to be so deep and so long. In thinking this, you will have immersed yourself in one of the greatest landscape mysteries of all time - as yet the story of the Grand Canyon remains controversial and unresolved among professional geologists.

It is one of the most commonly asked questions at the canyon, "How old is the Grand Canyon and how did it form?" It would seem that after almost 150 years of scientific study that there would be a quick and reliable answer but amazingly, it's not that simple of a problem and no one yet has come up with a theory that everyone can agree upon. The more that geologists delve into the intricacies and details, the more they seem to disagree on how and when the canyon may have been carved. Perhaps a very broad outline of events and processes can possibly be theorized but the specifics still elude us and the variations of ideas astound even the most casual observer.

The problem arises because as the Colorado River chisels deeper into the landscape, it causes the canyon to also become wider, thus removing more and more evidence from its earliest incarnation. It's possible that we humans may have arrived here too late to ever know with certainty exactly how and when the canyon formed. Yet the question remains and our curiosity is piqued when we consider the origins of this world class landscape feature. So what exactly is known about the carving of the Grand Canyon? How did this massive hole in the ground form?

The first geologist to view the canyon was John Strong Newberry and in 1859 he made the most basic observation of it - that it was erosion by running water that ultimately was responsible for the chasm.

This might seem all too obvious for many of us today but back in the mid-19th century the known geology of the southwest was quite limited. A valid first impression of the great gorge could be that it was formed by a giant fault or rift in the earth's crust that was only later occupied by a river (an example of this type of river is the Rio Grande in New Mexico). Newberry however, trained as a geologist, noticed that the stratification on either side of the Colorado River was "conformable," that is, not offset by faults and so must have been formed "wholly by the action of running water." Up to this time, no other place like the Grand Canyon had

been found or studied on the planet and Newberry's initial observations of the Grand Canyon revealed the most basic fact of the canyon's formation.

John Wesley Powell was the next geologist to see the canyon and where Newberry saw it from above, Powell saw it from the vantage of the river. However, in the course of his epic 101 day run from Green River, Wyoming to Callville, Nevada, Powell encountered hazards and obstacles such that by the time he reached Grand Canyon he and his men were in a race for survival against it. He never presented a theory per se on the origin of the great gorge but he did officially name it (Newberry referred to it simply as the Big Canyon) and he did say something original about the origin of the river system. He agreed with Newberry that it was the erosive power of the Colorado River that carved its majestic canyons. By now it should be obvious to us that when we speak of the origin of the Grand Canyon, we also refer to the origin of the Colorado River. You cannot discuss one without referring to the other.

So what is the known history of the river?

The broader study of the geologic evolution of the Rocky Mountain West tells us that when the sea last withdrew from the Grand Canyon region some 80 to 90 million years ago, some initial river system had to have been born on that landscape. Surprisingly, this river system was directed from southwest to northeast, exactly opposite the direction that the river flows today! This seemingly contradictory scenario is ironically one of the ideas that geologists generally agree upon concerning the river's history. It is impossible to know however, if this early river system, which may have existed from 80 to 17 million years ago, is responsible for any of the present day depth of the Grand Canyon, although there are a few geologists who believe that the canyon we see today was born from this ancient river configuration.

So if the river went the other way (and one could argue if a system that different really could be called the Colorado), when did it reverse its course? The northeast flowing system may have remained in some form until as recently as 17 million years ago when the San Andreas Fault in California was born. This event is pivotal in the story of the Grand Canyon. When this fault became active, it helped destroy the ancient mountains that were the headwaters of the northeast flowing streams. At this time, the rivers in the Grand Canyon region would have been compromised and may have dried up, become ponded or even partially reversed. But as the San Andreas continued to rip through the southwestern part of our continent, it caused subsidence in the land where those ancient mountains were previously located. Rivers must have increasingly become directed to the southwest as the land along the lower Colorado River corridor was dropped. Perhaps the course of the river in Grand Canyon had been already etched upon the landscape by this time, perhaps even a shallower incarnation of the Grand Canyon was already carved. We may never know.

But by about 5.3 million years ago, the Colorado River was flowing west off of the southwestern edge of the Colorado Plateau and into the Gulf of California. This is the earliest time that geologists

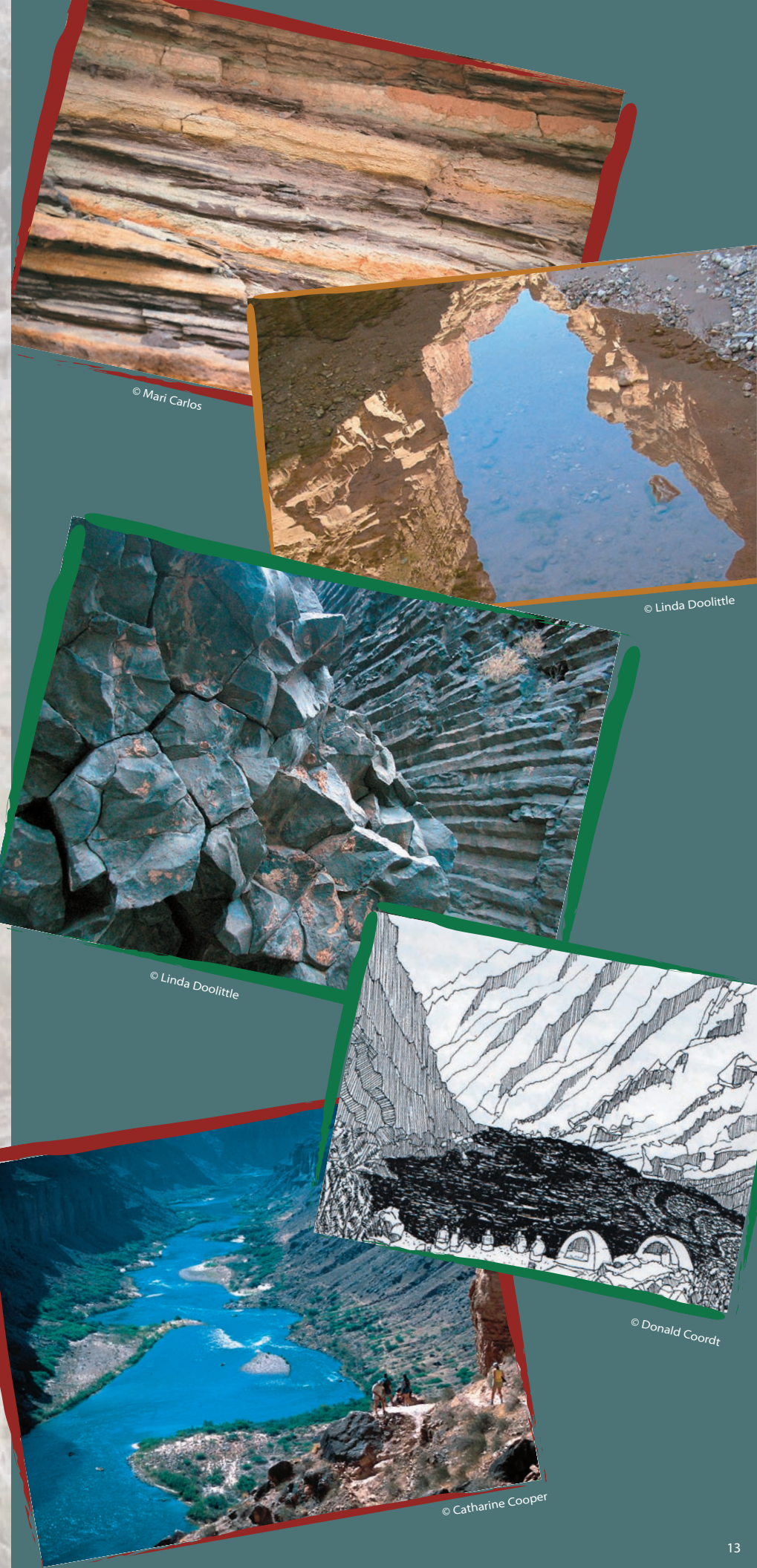
can document the specific river we see today. At this time the Grand Canyon was probably only half as deep as it is today! Imagine seeing a river and its course that we would readily recognize but set within the youthful confines of a much smaller and less deep Grand Canyon. The river beneath Grand Canyon Village may have been entrenched only into the Hermit or Supai formations at this time.

With the beginning of the Ice Age about 2 million years ago, all of the western part of North America became wetter and large glaciers grew and expanded in the Rocky Mountains. As these glaciers occasionally retreated, large volumes of water would travel through the Grand Canyon, moving huge boulders along the bed of the river. In combination with the continued lowering of the landscape to the west along the Toroweap and Hurricane faults, these huge meltwater floods scoured deeper into the Redwall and Tonto Group formations. Eventually, perhaps as recently as only one million years ago, the Vishnu Schist and Zoroaster Granite were exposed creating the three granite gorges. And as the river's track was deepened, other forces of erosion such as undercutting and gravity made the canyon wider, revealing the spectacle we see today.

These are the broad outlines of how the Grand Canyon came to be - a river that went the other way; a drainage reversal caused by the creation of a large, far-off fault; and Ice Age deepening of the canyon from melted glaciers. Uplift of the landscape was a huge factor as well but the exact timing and frequency of this uplift remains completely unresolved. Since the sea last left the area 80 to 90 million years ago there has been at least 17,000 feet of vertical uplift! But geologists cannot agree when this happened. Some think it all occurred prior to 40 million years ago, some think the most important uplift occurred in the last 5 million years.

How unusual that a canyon so magnificently displayed could reveal such conflicting evidence. Some geologists think the canyon was cut to its present depth 80 million years ago. Some think that catastrophic floods played a role 5.3 million years ago. It is part of the intrigue and mystery that lends to the charm of this phenomenal landscape. We may never know the specific details but remain humbled by the results!

Wayne Ranney is the author of the book, "Carving Grand Canyon". It is available at www.grandcanyon.org. Wayne has taken over 35 river trips through the Grand Canyon and is professor of geology at Yavapai College in Sedona and a trail guide for the Grand Canyon Field Institute.



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June 20, 1944. The US is at war, and the skies are crisscrossed by aircrews taking training flights before being sent overseas. One such flight took off in the early evening from the airbase at Tonopah, Nevada, for a night training mission. After flying east for about two hours, all four engines on the B-24 bomber suddenly stopped; in the silence, the pilot panicked and rang the bailout bell.

Three men, Lt. Charles Goldblum, F/O Maurice Cruickshank, and Cpl. Roy Embanks responded by diving out of the open bomb bay. As they hung under their swaying parachutes, drifting down into the blackness of the desert night, it's easy to imagine their feelings as they heard the engines restart and the bomber continue on its way. All of them later recounted how they could see the lights of a distant town as they floated down, but the lights suddenly went out as they continued to fall. In the morning, the men looked around them and realized that they had come down inside the Grand Canyon. Thus started what at least one newspaper called, with predictable hyperbole, "The greatest rescue in the history of Army aviation."

But wait, you're asking yourself by this point: what does this have to do with river running in the Grand Canyon. Bear with me a bit, we'll get to the river, I promise!

When the pilot got back and sheepishly reported his missing crew, the Army Air Corps mobilized a rescue mission. All three of the men had landed on the north side of the river on the Tonto Platform, over a thousand feet above Tuna Rapid at Mile 100. Two were unhurt, while the other broke his foot in a hard landing. One of them spent a harrowing night dangling over the cliff, and pulled himself up onto the Tonto in the morning. By the third day they had all found one another, but were beginning to suffer from the summer heat and the lack of water. They were planning to climb down to the river, build a raft, and float out to Lake Mead, when a search plane spotted them and dropped a smoke flare. Other planes quickly dropped supplies, water, a radio, flares, bedrolls, bottles of whiskey, and humorous notes ("Greetings! You are in the Grand Canyon!"), and, much relieved, the men settled down to await rescue. This was well before helicopters could perform such feats, however, so getting them out was much more difficult than it would be today. After exploring various methods of rescuing them, including an attempt by a team from the South Rim that was blocked by an impassable canyon, a rescue party of experienced climbers reached the men from the North Rim and led them out a hair-raising route up a rockfall in the Redwall; it was ten days from the time they jumped into the canyon before they reached the rim.

So, fast forward a few years, to 1948. The war is over, and Norm Nevills, the best-known river runner of his time, had resumed his annual Grand Canyon trips the year before. In 1948 one of his passengers was Nancy Streator, an adventurous girl of 17 from Salt Lake City. She had met Nevills the year before and even though she was an only child, had persuaded her parents to let her go on Nevills's 1947 trip down the upper Green River, from Wyoming to Jensen, Utah. In '48 she was back for the lower half of the Grand Canyon trip. The hike down to Phantom, however, just about did her in; her feet were covered with blisters and she could barely walk. But the plucky Nancy was always ready to try anything, and when Norm proposed an arduous hike up onto the Tonto from Tuna Rapid to retrieve the radio and other supplies that had been parachuted to the stranded Army fliers, she was game.

A bit of background is in order here. At this point Nevills was at the peak of his career, which would end in tragedy two years later when he and his wife were killed in a blazing crash of their

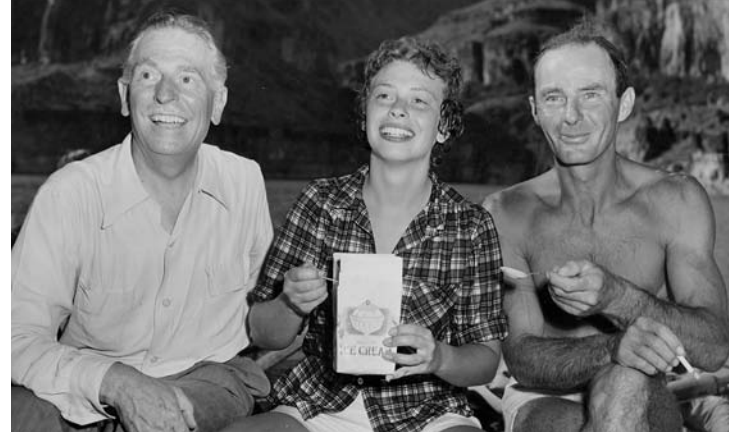
light plane in Mexican Hat, Utah. Nevills had many return guests on his trips because he went out of his way to make sure everyone had a great time. On the Grand trips and his bread-and-butter San Juan/Glen Canyon trips, he led people to out of the way places, camped in beautiful spots, and in Glen Canyon, put on firefall shows in which he would start a fire on a cliff, push it off, and, standing silhouetted in the firelight on top of the cliff, yell out a completely bogus story about Yogi the River God. Other times he would find a driftwood log in the river and do headstands on it as it floated along. He played practical jokes, built dams in side canyons so everyone could have a bath, set driftwood piles on fire, creating conflagration that could be half a mile long and might burn for days, and on and on. One of his favorite antics was to explore the mines around Tanner Rapid, just below the Little Colorado River, looking for old dynamite. If they found any, a stick or a case, he would carry it away from camp and then shoot at it with a pistol until it exploded off, to everyone's satisfaction. (Remember, these were the days before regulations or environmental concerns; please don't try any of this stuff today!)

The hike up to retrieve the radio was along this line. Everyone had heard about the stranded fliers, and Nevills somehow got the idea of finding the radio, and then presenting it to Grand Canyon superintendent Harold Bryant. Whether the radio worked or not didn't matter; the stunt was the real reason, and the resulting publicity. So the night of July 20, 1948, they camped at Boucher Rapid; the next day, they ran down to Tuna Creek at Mile 100 and set off. Along on the hike were Norm, Nancy Streator, Otis "Dock" Marston, the famous river curmudgeon and historian, and Rosalind "Ros" Johnson, a "famous horsewoman of Pasadena" and one of Nevills's regular customers. The others planned to wait by the river until the hikers returned.

The hike did not go well from the start. It was intensely hot, and while all were in good shape—Nevills was legendary for his stamina and strength, and Dock Marston was a grizzled old mountain goat—both Nancy and Ros Johnson were wearing only sneakers. Amazingly, they were carrying no water or food, expecting to either find water in the bed of Tuna Creek once they reached the rim, or find canteens in the abandoned camp. When they had almost reached the rim, Ros and Dock found one of the supply drops that the fliers had missed, with emergency



equipment, shoes, food, and a broken quart bottle of whiskey. Also among the items was a canteen of water, which they shared; Nevills later said it "Might be four years old but the water tasted like nectar." Upon reaching the rim, the two women rested in the shade while Dock and Norm scouted for the main camp, which they found without much trouble. The radio was in good condition but the



L-R Rank Masland, Nancy Streator, Norm Nevills

blankets, canteens, first aid kits, and so on, had started to deteriorate from the weather, and had been chewed on by desert animals. Nevills, to his boyish delight, found a couple of flare guns and a large supply of flares, and shot one off over the resting women to inform them of their success. They gathered up a bunch of booty and started back down, by now in the full sun of a Grand Canyon afternoon in July.

In the meantime, back on the river, the others were starting to get worried as it got later and later and the hikers did not return. Finally, though, just before sunset, they saw them descending the cliff. First was Marston, whom Frank Masland (owner of Masland Carpets of Pennsylvania and another Nevills regular) described as "tired" but wearing red pants that he had found at the camp and carrying a yellow metal tube. Next was Ros Johnson, who was "about all in," and could barely make it over a rocky point to reach the river without Masland's help. After some discussion over whether they should climb up to try to find the other two hikers, J. Frank Wright, one of Norm's boatmen, took everyone else downstream to camp but left one boat with Masland and John Doerr (one of the other passengers, Chief Naturalist for the Park Service) to wait for Norm and Nancy.

They stumbled in a short time later. Nancy's feet were blistered and swollen, and she was almost totally exhausted. Both threw themselves into the river. Norm was in good shape and still had the radio, although he had had to cache a bunch of other stuff that he'd gathered up. Since it was so late, they decided to camp where they were and move on in the morning. They drank "gallons of tea" that Masland had made, and went to bed, perched in the rocks. He noted in his journal "I am glad I did not go on the hike." The next day, they loaded into the one boat and found the rest of their party camped on a "fine beach" about a mile downriver. Nancy Streator limped around on her blistered feet for the rest of the trip.

Norm Nevills wasn't through with the flier's camp, though. In 1949, on his last trip through the Canyon, he stopped there again and hiked up to the camp, this time with P.T. Reilly, by now one of his boatmen (Norm and Marston had by this point had their famous falling out, and were not on speaking terms). By now most of the supplies were ruined, the parachutes rotted or nibbled apart, and Reilly reported that there was little left worth carrying back. They did retrieve a pack full of flares and a gun to shoot them, and Reilly found the original instructions to the men that had been dropped with their supplies (he kept those three typed pages and they are now in his papers in the Cline Library Special Collections and Archives, Northern Arizona University). With the flares, Norm put on a fireworks show that night. After Nevills's death, Reilly and Marston both complained to each other in letters about this hike, calling it a waste of time and a stunt, which it really was. Reilly especially was incensed that Norm would not allow time to hike up to Thunder River, but would waste time on the hike to the fliers

camp.

The fliers camp has been visited a number of times since then, both by people from the river and hikers from the North Rim. In 1965, the legendary canyon hiker Harvey Butchart made his way there, following the original route that had been used to lead the men out. In a letter to Dock Marston, he wrote that he was probably the only person to use that route since 1944. He found little remaining, but nearby was the desiccated body of a burro, shot from a helicopter during the drive to rid the canyon of burros. Butchart noted that there was evidence that helicopter had landed at the camp. As recently as 2004, a Grand Canyon boatman on a private trip hiked up to the camp and, despite what Butchart noted, found parts of the radio, food and water containers, and other junk still laying around, slowly rotting away under the relentless Grand Canyon sun.

Roy Webb is the author of several books on Grand Canyon and Colorado Plateau river running history, including Call of the Colorado. He is the editor of High, Wide and Handsome, The River Journals of Norman D. Nevills. Roy is multimedia archivist at the University of Utah's Marriott Library. Photos J. Willard Marriot Library - Special Collections, University of Utah.

Larger Than Time

By Jeff Giesea

Rock upon rock

I see the sparrows fluttering

Between wind, dust, and time

The flowing and the sowing

Of time and rhyme, and serpentine

I sit idly and hear the voices.

But there's a raven on the look

Its dark beak foreboding

A shadow within a shadow

With the waters edge descending

Into granite and panic, and drenched unknown

I sit idly and hear the voices.

It's larger than time! I think I get it now

A place of unknowns and painted rocks

And specs of dust piled neatly

In the Kaibab, the Esplanade, our pathetic frocks

I now see the Rim and it's Him! Oh wait, just a limb

I sit idly and hear the voices.

The sun burns my forehead

And I am Captain Powell, descending

Into dry one-armed camp

The water rushes on, still surging

My wings are burning and yearning (but thank God

discerning)

I sit idly and hear the voices.

Yet the birds still chirp, the wind still blows

Oh God, the moon shines brightly!

The stars framed by silhouettes

Of midnight mesas and distant laughs softly

And the next day we float on our boat, and get soaked

And I sit idly and hear the voices.

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